7.1 Exponential Growth

Algebra 1 Name: _____ **CA #2**

Are the following functions linear, exponential or neither?

1. $f(x) = 15x$	2. $f(x) = 3^x$	3. $f(x) = 21x^{5.6}$	4. $f(x) = 10 \cdot 8^x$	5. $f(x) = -10(4)^x$

Create a model (equation) for each scenario.

6. A home is currently worth $250,000 and its value increases at a rate of 4.5% per year.

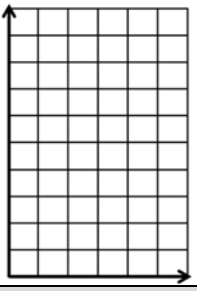
7. During a Buffalo Bill's game, Mr. Kelly's blood pressure rises 9.1% each quarter. At kickoff, his systolic blood pressure is 130.

8. A virus is spreading through the United States. On day zero, there are 121 people who have the virus, but it spreads at a rate of 582% increase every day! Create an explicit formula that models the number of people who are infected by the virus. How many people will be infected with this virus after 5 days? Round to the nearest whole number.

Sketch the graph by filling out a T-chart. Find AT LEAST THREE points (even if they can't all fit on the graph).

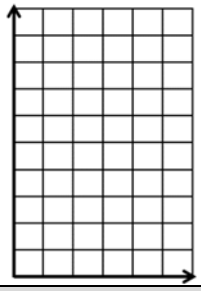
9. $y = 2(5)^x$

x	y



10. $y = 0.2(8)^x$

x	y



Given the following table of values, create an equation that fits these points.

11.

x	0	1	2	3
y	3.5	14	56	224

12.

x	0	1	2	3
y	5	10.5	22.05	46.305

For each equation, identify the initial value (I.V.) and the percent increase.

13. $y = 10(1.651)^x$	14. $y = -6(5.65)^x$	15. $y = 2.01(1.882)^x$	16. $y = (2.993)^x$
I.V. ____ % Inc: ____	I.V. ____ % Inc: ____	I.V. ____ % Inc: ____	I.V. ____ % Inc: ____

Answers to 7.1 CA #2

1. Linear	2. Exponential	3. Neither		4. Exponential	5. Exponential
6. $y = 250{,}000(1.045)^x$	7. $y = 130(1.091)^x$	8. $f(x) = 121(6.82)^x$ $f(5) = 1{,}785{,}284$		9. Check with a calculator	10. Check with a calculator
11. $y = 3.5(4)^x$	12. $y = 5(2.1)^x$	13. 10; 65.1%	14. -6; 465%	15. 2.01; 88.2%	16. 1; 199.3%